



Approval body for construction products and types of construction

#### **Bautechnisches Prüfamt**

An institution established by the Federal and Laender Governments



## European Technical Assessment

ETA-13/0904 of 31 May 2018

English translation prepared by DIBt - Original version in German language

### **General Part**

Technical Assessment Body issuing the European Technical Assessment:

Trade name of the construction product

Product family to which the construction product belongs

Manufacturer

Manufacturing plant

This European Technical Assessment contains

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of

This version replaces

Deutsches Institut für Bautechnik

"PYROCOMB Intube, Typ CTS" and "PYROCOMB Intube, Typ CTS-HP"

product for cable penetration seals

OBO Bettermann Produktion Deutschland GmbH & Co. KG Hüingser Ring 52 58710 Menden DEUTSCHLAND

Herstellerwerk S

13 pages including 9 annexes which form an integral part of this assessment

EAD 350454-00-1104

ETA-13/0904 issued on 28 June 2013

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### Specific Part

### 1 Technical description of the product

The construction products consist of PVC-U half-pipes and an inlay made of an intumescent material which expands under heat exposure.

- In the case of the construction product "PYROCOMB® Intube, Typ CTS", design variant 1, two half-pipes are joined by means of a click fastener to form a pipe sleeve. The inlay is bonded into the half-pipes (see Annex 3).
- In the case of the construction product "PYROCOMB® Intube, Typ CTS", design variant 2, two half-pipes are joined by means of a fastener taking the shape of an H profile to form a pipe sleeve. The half-pipes are coated with the inlay (see Annex 3).
- The construction product "PYROCOMB® Intube, Typ CTS-HP" consists of a half-pipe. The inlay is bonded into the half-pipe. The inlay overlaps the half-pipe by about the half-pipe's diameter. This overlap is used to form the bottom (see Annex 4).

Detailed specifications (e.g. dimensions) of the fire safety related performance criteria for the construction products are given in Annexes 1 to 4. Detailed information on the construction products' components are deposited with Deutsches Institut für Bautechnik.

NOTE:

The characteristics listed are suitable both for identifying the construction products as well as for performing the manufacturer's factory production control.

## 2 Specification of the intended use in accordance with the applicable European Assessment Document

The construction products "PYROCOMB® Intube, Typ CTS" and "PYROCOMB® Intube, Typ CTS-HP" shall be used as part of cable penetration seals.

Cable penetration seals are used to seal openings in fire-resistant walls or floors, which are penetrated by cables. Their aim is to preserve the walls' or floors' fire resistance in the area of the penetrations.

Within the framework of this ETA, the fire resistance was demonstrated for cable penetration seals consisting of two half-pipes of the type "PYROCOMB® Intube, Typ CTS" (for floor and wall installations) and for cable penetration seals consisting of one half-pipe of the type "Würth Kabelröhre, Typ KT" (for wall installations).

The cable penetration seals had a closure made of a flexible foam on both sides for "PYROCOMB® Intube, Typ CTS" pipe sleeves or one side for "PYROCOMB® Intube, Typ CTS-HP" half-pipes.

After inserting the foam into the remaining openings, this closure was sealed from the outside with an ablative fire stopping product.

In addition, the joints between the pipe sleeve or the half-pipe and the surrounding component were sealed.

The construction products "PYROCOMB® Intube, Typ CTS" and "PYROCOMB® Intube, Typ CTS-HP" may be used for penetration seals of use category X (use at conditions exposed to weathering – rain, UV, frost) provided that the other components of the penetration seal meet the durability requirements. The resistance to fire of the penetration seals shall be verified on a case-by case basis.

The performance specified in Section 3, however, can only be assumed if the penetration seals, which were manufactured using the construction products "PYROCOMB® Intube, Typ CTS" or "PYROCOMB® Intube, Typ CTS-HP", are exposed to dry internal conditions or internal conditions with high humidity. In both cases, the temperature may not fall below 0°C (category  $Z_1$ ).

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More detailed information and data on the verified penetration seals are given in Annexes 2 to 9.

The performance specified in Section 3 relates only to these penetration seals (e.g. with respect to the design and arrangement of the penetration seal components and the type and position of the services).

### 3 Performance of the product and references to the methods used for its assessment

### 3.1 Intended use: use in penetration seals

### 3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Resistance to fire of a penetration seal containing the product	The resistance to fire depends on the design and installation of the penetration seal and on the other components forming the penetration seal. More details on the tested cable penetration seals and the related fir resistance cases are given in Annexes 1 to 9

# 4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 350454-000-1104 the applicable European legal act is: 1999/454/EC.

The system to be applied is: system 1.

## 5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 31 May 2018 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe Head of Department *beglaubigt:* Bisemeier



The factory manufactured construction products of the type "PYROCOMB® Intube, Typ CTS" and "PYROCOMB® Intube, Typ CTS-HP" consist of PVC-U half-pipes and an inlay made of an intumescent material. They are used to seal openings in fire-resistant walls and floors.

# Properties and performance criteria of the components of the construction products of the type "PYROCOMB® Intube, Typ CTS" and "PYROCOMB® Intube, Typ CTS-HP"

Component	Description	
"Half-pipe"	Dimensions: Ø 116,4; s = 3,2 mm;	
(with glued groove bar or click fastener)	l = 150 mm, 200 mm or 300 mm	
	Material: PVC-U according to EN 1452	
"Inlay" for	Thickness = 1,5 mm (dry layer thickness)	
"PYROCOMB® Intube, Typ CTS", design	Material: intumescent material*	
variant 1	Classification of fire behavior according to EN 13501-1: E	
and "PYROCOMB® Intube, Typ CTS-HP"		
"Inlay" für	Thickness = 1,5 mm (dry layer thickness)	
"PYROCOMB® Intube, Typ CTS", design	Material: intumescent material*	
variant 2	Classification of fire behavior according to EN 13501-1: B-s1, d0	

The properties listed can be used both for the identification of the construction product and for the implementation of the factory production control of the manufacturer.

Implementation details for the factory production control are included in the inspection plan.

\* The composition of the materials is deposited at DIBt.

### Description of the additional ingredients of the tested sealings

Produkttyp	Handelsname	
"Closure"	thickness = 40 mm;	
(for closing the pipe sleeve)	diameter corresponding to the pipe diameter;	
	material: flexible foam of the type "Basotect" or "Basotect G"; BASF	
	AG	
	Classification of fire behavior acc. to EN 13501-1: C-s1, d0	
"Sealing"	thickness ≥ 0,5 mm (dry layer thickness)	
-	material: intumescent material of the type "PYROCOAT ASX" acc. to	
	ETA-17/0364	
	Classification of fire behavior according to EN 13501-1: E	
50 mm thick mineral wool boards	"Rockwool Hardrock 040" Deutsche Rockwool Mineralwoll GmbH,	
	45866 Gladbeck, Germany; acc. to EN 13162	
	Classification of fire behavior acc. to EN 13501-1: A1	
Mineral wool	"Rockwool Lose Wolle RL"; Deutsche Rockwool Mineralwoll GmbH,	
	45866 Gladbeck, Germany; acc. to EN 14303	
	Classification of fire behavior acc. to EN 13501-1: Klasse A1	
32 mm thick system floor plates	"GIFAfloor FHB" Knauf	
	Classification of fire behavior acc. to EN 13501-1: A1	
Gap filling material	Fire protection mortar "GFM"	
	Acc. to EN 998-2	
Gap filling material	"PYROMIX" acc. to ETA-17/0472	
	Classification of fire behavior acc. to EN 13501-1: A1	
Kabelwickel	"PYROWRAP Wet, FSB-WB" acc. to ETA-13/0158	
	Classification of fire behavior acc. to EN 13501-1: Klasse B-s1,d0	

"PYROCOMB Intube, Typ CTS" and "PYROCOMB Intube, Typ CTS-HP"	
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Description of the construction products, properties and performances

Annex 1



Performances of tested penetration seals, comprising the construction product "PYROCOMB® Intube, Typ CTS" or "PYROCOMB® Intube, Typ CTS-HP"					
	Essential requirement	Test method	Construction of the sample	Performance acc. to EN 13501-2	
1	Resistance to fire	EN 1366-3	Cable penetration seal containing the product "PYROCOMB® Intube, Typ CTS" used in a 100 mm thick flexible wall; design and layout of the penetration seal acc. to annex 6*	EI 90	
2	Resistance to fire	EN 1366-3	Cable penetration seal containing the product "PYROCOMB® Intube, Typ CTS" used in a 150 mm thick rigid floor; design and layout of the penetration seal acc. to annex 6*	EI 120	
3	Resistance to fire	EN 1366-3	Cable penetration seal containing the product "PYROCOMB® Intube, Typ CTS" used in a 100 mm thick flexible wall; design and layout of the penetration seal acc. to annex 7*	EI 90	
4	Resistance to fire	EN 1366-3	Cable penetration seal containing the product "PYROCOMB® Intube, Typ CTS" used in a 150 mm thick rigid floor; design and layout of the penetration seal acc. to annex 7*	EI 90	
*	Resistance to fire	EN 1366-3	Cable penetration seal containing the product "PYROCOMB® Intube, Typ CTS-HP"; design and layout of the penetration seal acc. to annex 9*	El 90 resp. El 120	

Illustrations without guarantee for completness

The tested/ illustrated seals are only examples for the use.

The use of the construction products "PYROCOMB® Intube, Typ CTS" and "PYROCOMB® Intube, Typ CTS-HP" in penetration seals shall be in accordance with national requirements for planning, design and execution and in accordance with the installation instruction of the manufacturer.

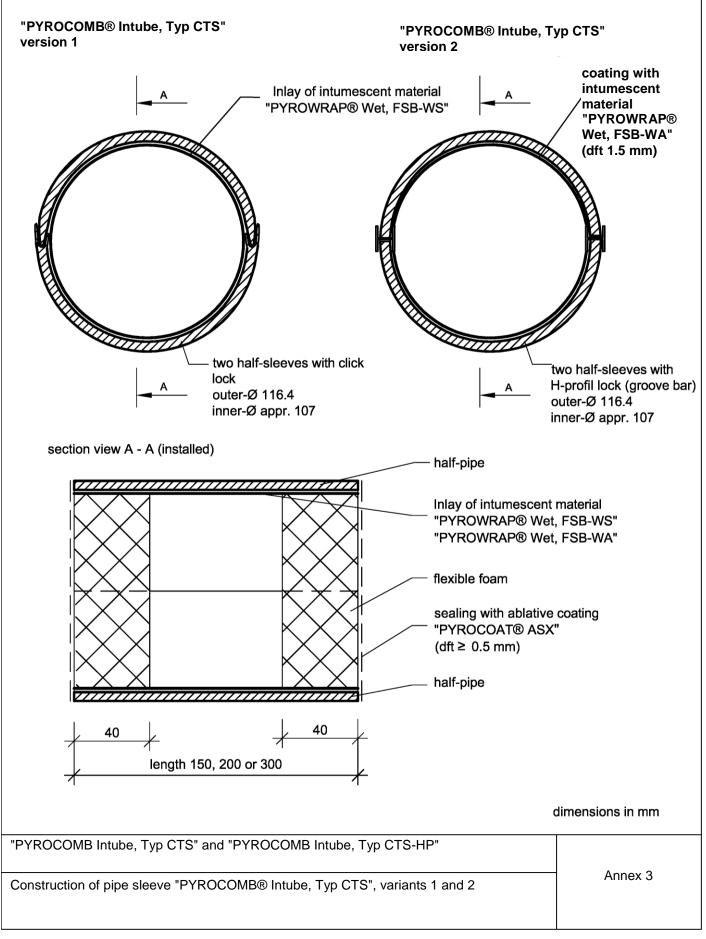
"PYROCOMB Intube, Typ CTS" and "PYROCOMB Intube, Typ CTS-HP"

Description of the construction products, properties and performances

Annex 2

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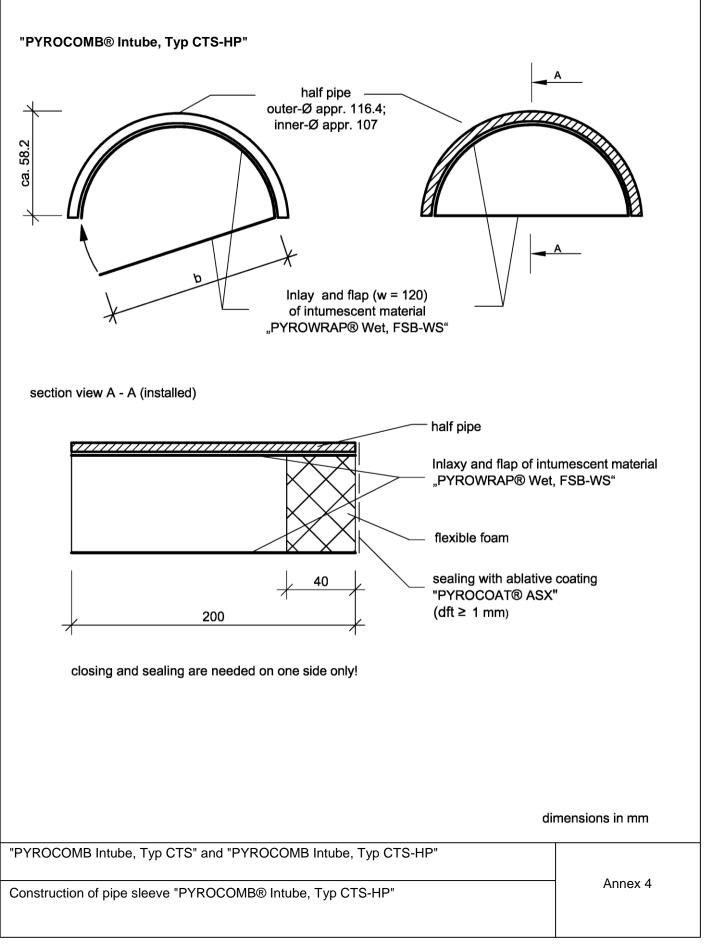




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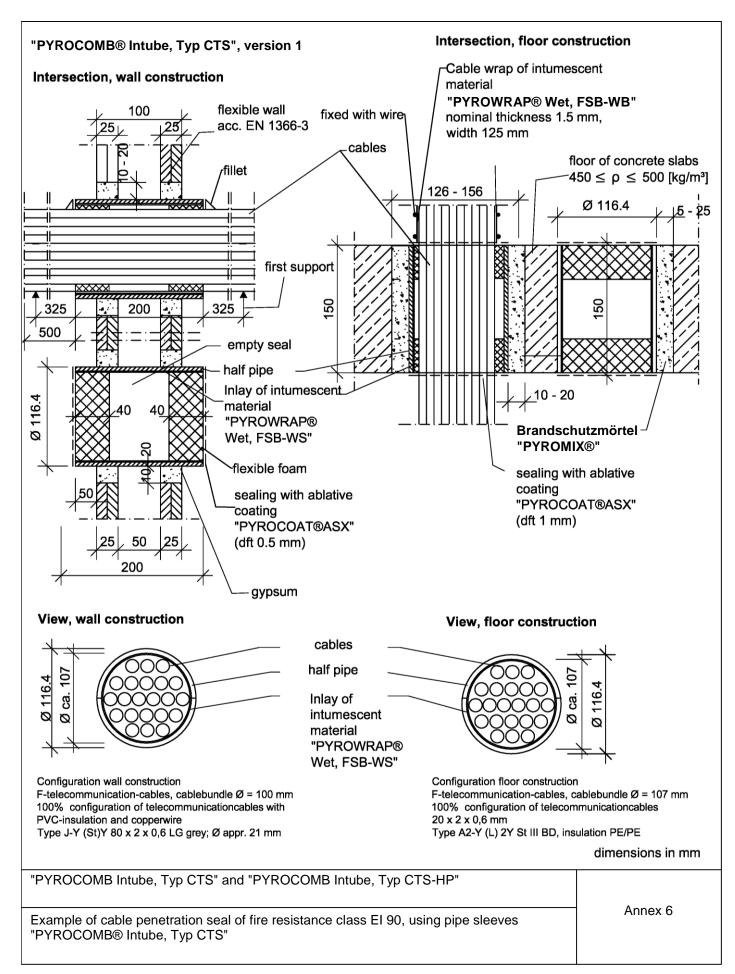
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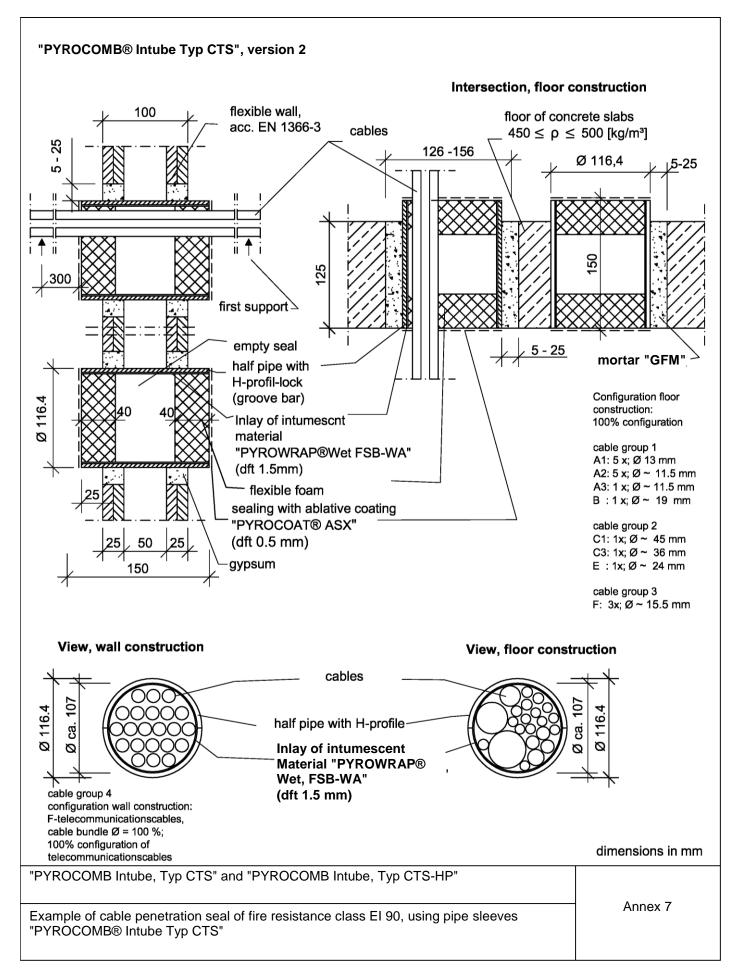






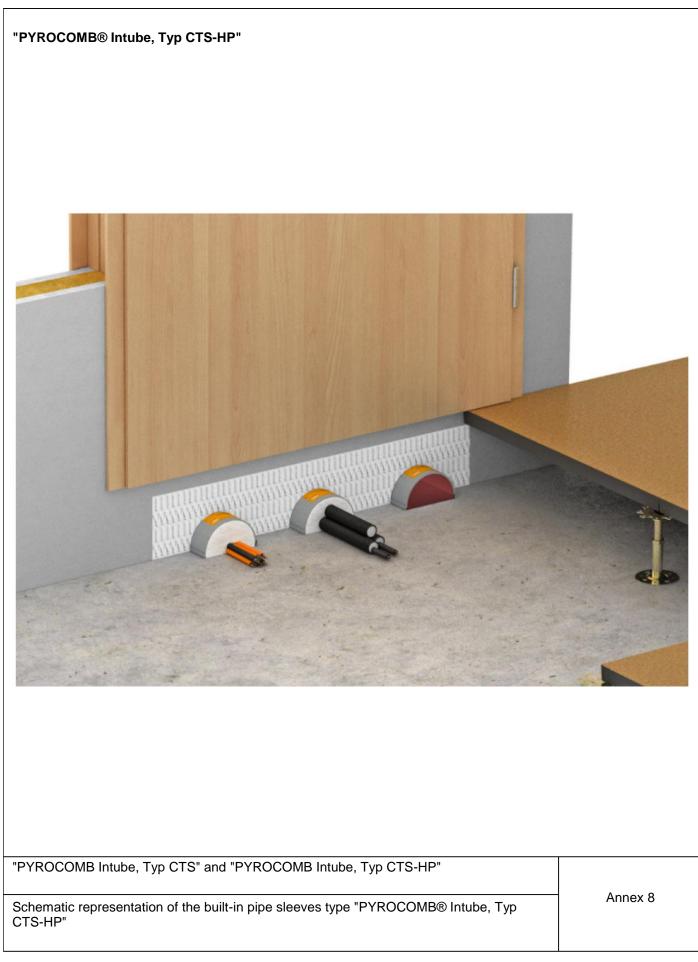
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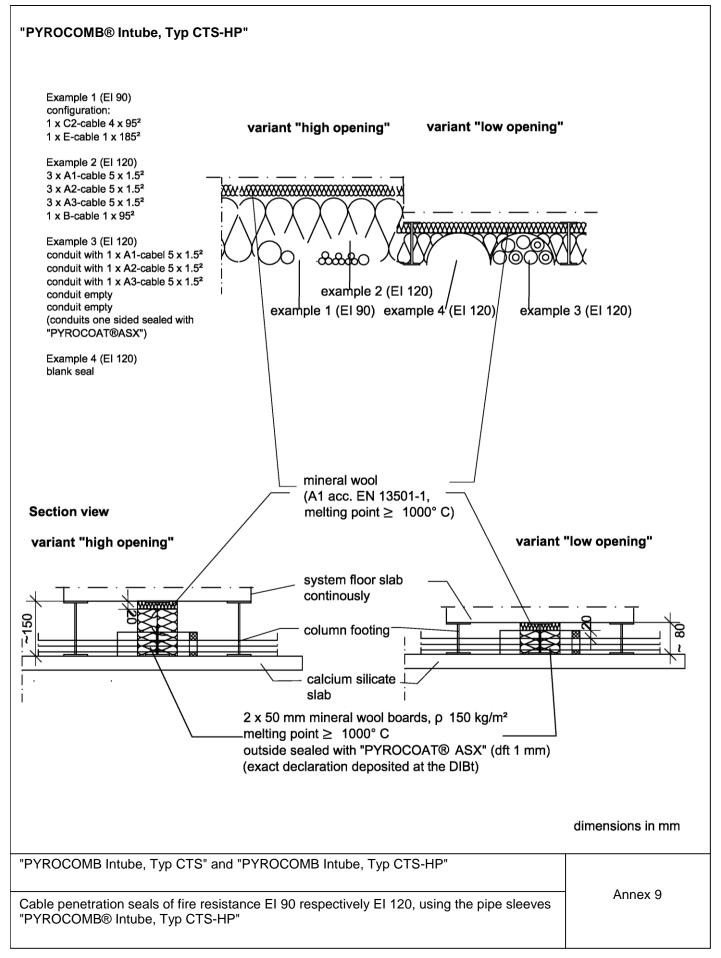




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